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DOT-13, 2124

ADDITIONAL INFO

HMT Associates, L.L.C.
1660 K Street, N.W.
Washington, DC 20006

Phone: 202-463-3511
Fax: 2024633512

FAX COVER SHEET

FAX NUMBER TRANSMITTED TO: 202-366-3753

To:	**Phil Olson**
Of:	Department of Transportation
From:	**Pat Quinn**
Date:	**December 22.1998**

COMMENTS:

I have enclosed a copy of an MSDS covering the **first** of the materials that must be shipped before the end of the month. These materials will all be metallocene-based catalysts. As the program continues, other catalysts under development are to be shipped. These catalysts may be Class 4. Division 4.2 or 4.3 materials according to the chemical structure of the product, or may even be unregulated. Many **metallocenes** are shipped unregulated. Unregulated catalysts of this type are actually now being shipped. This is for a development program underway in which the functioning catalysts are being produced and studied to achieve optimum reaction during production.

Metallocenes are complex compounds which consist of a metal catalyst composed of a metal chemical structure deposited on substrata or fillers. In the case of these compounds the filler is 79% silica. The active material on the substratum is a complex structure of methylaluminoxanes with a transition metal which may be zirconium, hafnium. titanium or iron. The structure consists of a metal ion in the center with organic cyclopentadienyl ligands. According to how the concentration of a specific transition metal (1% or more) ratio to the methylaluminoxane (20% or less) varies will determine the characteristics of these solid compounds. It results that they are either unregulated or may meet any one of the descriptions provided in **Albemarle's** application.

*** NOT COUNTING COVER SHEET. IF YOU DO NOT RECENE ALL PAGES, PLEASE TELEPHONE US IMMEDIATELY AT 202-463-3511.**

September 30, 1998

USA and WORLDWIDE

Material Safety Data Sheet

PPCO-M CATALYST

PHILLIPS 66 COMPANY
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-8327
For Additional MSDSs: (918) 661-6962
Product Information: 1-800-231-1212

A. Product Identification

Synonyms: catalyst
Chemical Name: Proprietary
Chemical Family: Catalyst
Chemical Formula: Proprietary
US Reg. No.: Net Established
Product No.: Nst Established

Product and/or Components Entered on EPA's TSCA Inventory: No

This product is not listed in the Toxic Substances Control Act (TSCA) Inventory of chemicals, but the commercial application of this product has been approved by EPA unda TSCA.

B. Components

The specific chemical identity of this material is being withheld as a trade secret. In accordance with the provisions of 29 CFR Part 1910.1200 (i), it will be provided to a health professional when requested, and/or to a physician or nurse in a medical emergency through utilization of the above Emergency Telephone Number.

NA - Not Applicable NE - Not Established

C. Personal Protection Information

Ventilation: Use adequate ventilation.

Respiratory Protection: If respiratory irritation is a problem, use appropriate NIOSH approved air purifying respirator.

Eye Protection: Use chemical goggles.

Skin Protection: Use protective garments to prevent excessive skin contact. Use gloves resistant to the material being used. (Nitrile; Teflon; Vitron)

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

D. Handling and Storage Precautions

Proper personal protective equipment must be used when handling this chemical.

Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist, fume or dust. Immediately remove and launder contaminated clothing before reuse. Keep away from contact with clothing and other combustible materials. Wash thoroughly after handling. Use only with adequate ventilation.

Store under Nitrogen. Refrigerate. Keep away from contact with water. Store in well-ventilated area. Store in tightly closed container.

E. Reactivity Data

Stability: Stable
Conditions to Avoid: Air and Moisture Sensitive.
Incompatibility (Materials to Avoid): Acids and Oxidizers

Hazardous Polymerization: Will Not Occur
Conditions to Avoid: Not Applicable
Hazardous Decomposition Products: Methane, a highly flammable gas is released when product comes in contact with water, isopropanol or other active hydrogen source.

F. Health Hazard Data

Recommended Exposure Limits:

Not Established

Acute Effects of Overexposure:

Eye: Corrosive. May cause burns and permanent tissue damage.

Skin: Corrosive. May cause burns and permanent tissue damage.

Inhalation: Corrosive. Inhalation may cause severe irritation and/or burns of the respiratory tract.

Insertion: Corrosive. Ingestion may cause severe irritation and/or burns of the gastrointestinal tract.

Subchronic and Chronic Effects of Overexposure:

The catalyst carrier is amorphous (non-crystalline) silica. Long term exposure to high concentrations of amorphous silica can cause non-debilitating lung changes. Consequently, dusty conditions should be avoided.

Other Health Effects:

Polyethylenes, when heated, can release vapors and gases which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid and formic acid. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off-gases can lead to pulmonary edema. Adequate ventilation should prevent sensory discomfort.

A Toxicity Study Summary is available for Polyethylene upon request.

Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	___	___	Toxic	___	___
Suspect Carcinogen	___	___	Corrosive	___	_X_
Mutagen	___	___	Irritant	_X_	___
Teratogen	___	___	Target Organ Toxin	_X_	_X_
Allergic Sensitizer	___	___	Specify - Lung Toxin.		
Highly Toxic	___	___			

First Aid and Emergency Procedures:

Eye: Immediately hold eyelids apart and irrigate eyes with running water for at least fifteen minutes and continue to irrigate until otherwise directed by a physician. Treat for shock as necessary. Seek immediate medical attention.

Skin: Immediately flood affected area with running water for at least fifteen minutes while removing contaminated clothing and shoes. Treat for shock as necessary. Seek immediate medical attention.

Inhalation: Immediately remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Treat for shock as necessary. Seek immediate medical attention. .

Ingestion: If vomitus is bloody, □ mot ● ttomgt to give anything by mouth. otherwise, immediately rinse mouth and lips and assist the subject in swallowing large amounts of water. Do not induce vomiting ◆ ● ttsept chemical neutralization. Treat for shock as necessary. Seek immediate medical attention.

G. Physical Data

Appearance:	Pink solid
Odor:	Not Applicable
Boiling Point:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density (Air = 1):	Not Applicable
Solubility in Water:	Slight
Specific Gravity (H20 = 1):	Not Applicable
Percent Volatile by Volume:	Net Applicable
Evaporation **Rate (Butyl Acetate=1):**	Not Applicable
Viscosity:	Not Applicable

H. Fire and Explosion Data

Flash **Point (Method Used):**	Not Applicable
Flammable Limits (% by Volume in Air):	LEL - Not Applicable UEL - Not Applicable
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide. (CO2)
Special Fire Fighting Procedures:	Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH self-contained breathing apparatus (SCBA) and other protective equipment and/or garments as described in Section C if exposure conditions warrant.
Fire and Explosion Hazards:	Carbon oxides and various hydrocarbons may be released when burned.

I. *Spill, Leak and Disposal* Procedures

Precautions Required if Material is Released or Spilled:
Wear protective equipment and/or garments described in Section C if exposure conditions warrent. Keep out of water sources and sewers.

Waste Disposal (Insure Conformity with 31 Applicable Disposal Regulations):
Treat with isopropanal and discard once reaction is complete. Contact with the isopropanol or with any active hydrogen source (such es water) will release methane gas which is highly flammable.

J. *DOT Transportation*

Shipping Name:	Water-reactive solid. n.o.s. (contains Methylaluminoxane)
Hazard Class:	4.3 (Dangerous when ❖ ♦ ● rta&at)
ID Number:	UN 2813
Packing Group:	I
Marking:	Water-reactive solid, n.o.s. (contains Methylaluminoxane), UN 2813
Label:	Dangerous when wet
Placard:	Dangerous when wet/2813
Hazardous Substance/RQ:	Not Applicable
Shipping Description:	Water-reactive solid, n.o.s. (contains Methylaluminoxane), 4.3, UN 2613, PG I, Dangerous when wet
Packaging References:	49 CFR 192.211, 173.242

K. *RCRA Classification - Unadulterated Product as a Waste*

Prior to disposal, consult your environmental contact to determine if the TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference PO CFR Part 261.

L. *Protection Required for Work on Contaminated Equipment*

Contact immediate supervisor for specific instructions before workis initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

M. *Hazard Classification*

_X_ This product ● oetr tho following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1970.1200):.

___ Combustible Liquid	___ Flammable Aerosol	___ Oxidizer
___ Compressed Gas	___ Explosive	___ Pyrophoric
___ Flammable Gas	_X_ Health Hazard (Section F)	___ Unstable
___ Flammable Liquid	___ Organic Peroxide	_X_ Water Reactive
___ Flammable Solid		

___ Basedon information presently ● rolleblo, thisproduct doesnot meet any of the hazard definitions of 29 CFR Section 1910.1200.

N. Additional Comments

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

NFPA 704 Hazard Codes - - - - - - - - - Signals

Health	: 4	Least - 0
Flammability	: 2	Slight - 1
Reactivity	: 2	Moderate - 2
Special Haz.	: W	High - 3
		Extreme - 4

W - Material demonstrates unusual reactivity with water.